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NPIC/TSSG/DED-1654-69

9 June 1969

MEMORANDUM FOR: Chief, Plans & Programs Division, PPBS/NPIC

THROUGH : Chief, Technical Services & Support Group, NPIC

SUBJECT : R&D Status Report on Selected Projects

REFERENCE : PPD/PPBS Speed Letter, Dated 24 December 1968

1. The following May Project Status information is forwarded in response to the request contained in the reference letter:

a. High Precision Stereo Comparator - The work at the [] plant is progressing on schedule. The [] Clean Room is complete and the comparator is starting to take shape. The granite stages are in place and the operators console has just about been completed. The optical system, which is being fabricated at [] is still the critical path item for the entire project. [] General Manager visited [] the last week of May in an attempt to tighten the optical schedule and prevent any further slippage in the program. The correlation subcontract work with [] is on schedule and acceptance tests are planned for early in July.

b. Automatic Target Recognition Program - Contract negotiations for Phase IV were held at the Contractor's plant in [] on 13 and 14 May. A cost plus fixed fee contract for [] was negotiated with a fee of 8 1/2 per cent for a total of []. The contract is for a sixteen month effort with a starting date of 12 May 1969.

Approximately 80% of the funding will be applied towards the construction of an engineering prototype Automatic Target Indexing Device (ATID). The remaining 20% of the funding will be used for sustaining research and development of related ATR techniques for real-time filter generation, change detection and faster machine learning algorithms.

Thirteen weeks from the contract date, a conceptual decision must be made as to whether the diffraction pattern sampling technique or the electronic clue extraction method will be used in the ATID. Six months from contract date the conceptual design will be finalized and evaluated. Fabrication of the ATID will require about eight months leaving about two months for checkout and delivery.

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c. 1540 Split-Format Light Table - Testing, engineering evaluation, has been completed, and the table has been returned to the [] for modification. After completion of these changes the table will again be briefly evaluated for suitability as a production instrument. Estimated date for completion of this phase is 1 August.

d. Dry-Silver Material and Equipment - NPIC Management visited the [] facilities on 12 May for a briefing and demonstration of material and equipment. Members of [] top management are in the process of being cleared for a briefing at NPIC on Center photo requirements. It is expected that this visit will provide Company personnel with a better understanding of NPIC film and equipment requirements, particularly with respect to specific operations.

e. Wide-Field, High-Power Anamorphic Stereoviewer - The Contractor has reported that an additional [] will be required above that previously allocated to fabricate the instrument. An evaluation is presently being made to determine whether NPIC should continue the effort, by initiating the fabrication phase. In addition, the NPIC study concerning the short eyepoint of the instrument is continuing. This eyepoint is especially critical with regard to operators who wear eyeglasses.

f. Advanced Rhomboids Model II - During a meeting in early May, the Contractor presented a series of alternate approaches to complete the program. From this series, NPIC requested that the two most realistic alternatives be priced and on 28 May the Contractor responded stating that the cost range of the alternatives is [] and they range in time from 4 to 5 months. These two alternatives, together with their probabilities of success, are presently being evaluated.

g. Automatic Stereo Scanner - During May 1968, [] prepared a technical proposal for a 15-week optics redesign and bench test. The original version was received on 14 May and an updated version on 26 May. This document, in conjunction with the Acceptance Test plan, defines the work to be done by []. So far, [] has refused a Fixed Price amendment; in lieu of this, they propose a tightly monitored effort with three intermediate milestones and a strengthened optical design team. Consultation between NPIC and [] was initiated on 22 May at the Center to discuss the possibility of transferring the project to []. We are awaiting a letter proposal for further action by []. Documentation has been prepared by DED recommending follow-on action.

h. Image Comparison Microstereoscope - During May, [] conducted an internal Design Review and are midway in a Cost-to-Complete estimate. The preliminary results were reported to the Project Officer on 3-4 June. The major technical problems include inadequate alignment procedures and "double-gauss" optical design problems similar to those experienced recently with the

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Advanced Stereo Rhomboid project. The Design Review also reveals that coordination between the project managers and individual designers has been lacking, resulting in optimistic reporting of completion percentages. A change in project management and other new supervisory practices have been initiated. By a major effort during May, [] has almost completed all design and detailing. The preliminary figures show the major overrun area to be in Mechanical Design and Detailing, despite the optical problems mentioned above. Although still predicting a January 1970 delivery, they are now anticipating a total contract overrun of []. A formal letter from [] will be handcarried to NPIC on 11 June 1969. It will describe all problems and solutions possible.

[]
Chief, Development & Engineering Division,
TSSG

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